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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/355,214	07/23/1999	ANDREW C. CHAN	A-64383-2	6140

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FLEHR HOHBACH TEST
ALBRITTON & HERBERT
FOUR EMBARCADERO CENTER
SUITE 3400
SAN FRANCISCO, CA 94111

EXAMINER	
LU, FRANK WEI MIN	
ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/355,214	Applicant(s) CHAN ET AL.
	Examiner Frank W Lu	Art Unit 1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Application status

1. Applicant's response to the office action filed on July 22, 2002 has been entered as Paper No:15. The claims pending in this application are claims 35-45. Rejection and/or objection not reiterated from the previous office action are hereby withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 35-45 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to a very large genus of recombinant BLNK protein species comprising the protein of SEQ ID NO:1, species of protein comprising an amino acid sequence at least 95% identical to SEQ ID NO:!, species of nucleic acids encoding the protein and species of antibodies to the protein. In addition to enablement the first paragraph of 112 requires a "written description". As set forth by the Court in *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111, the written description must convey to one of skill in the art "with reasonable clarity" that as of the filing date applicant was in possession of the claimed invention. The specification describes the protein, BLNK1, and its splice variant, BLNK2, and discloses the amino acid sequence of

BLNK1 (SEQ ID NO:1) as well as the nucleotide sequence encoding it (SEQ ID NO:2). However, the specification is silent regarding the sequences of other BLNK protein and nucleic acid species to which the claims are drawn. The specification does not describe any of the large number of nucleic acids and peptide species encompassed by the claims which encode a recombinant BLNK protein comprising SEQ ID NO:1 or which have at least 95 percent identity to these nucleotide and amino acid sequences as well as the claimed methods, compositions and antibodies involving the nucleic acid and amino acid sequence species encompassed by the claims. The claims encompass a very large number of nucleic acids and proteins only one of which in each category is disclosed. The specification states at page 5 that nucleic acids and proteins having a given percent homology may be "determined using standard techniques known in the art, such as the Best Fit program... or the BLASTX program" and that "alignment may include the introduction of gaps in the sequences to be aligned". This loose description of how the claimed sequences may be found does not provide sufficient teaching or guidance to enable one skilled in the art to determine the specific sequences that are within the scope of the claims. No specific algorithm used for alignment nor the Gap or Gap Extension Penalties is disclosed. At page 15 the specification states that the invention includes "amino acid sequence variants" of three types: "substitutional, insertional or deletional" and may be "fragments" of BLNK proteins (lines 20-29). Pages 16-17 discuss the kinds of amino acid substitutions that may be brought about by mutation but no teaching or guidance is provided as to which residues of the proteins may be substituted or deleted or which amino acids are to be inserted at which positions. For example, in a 456 amino acid sequence comprising 95% identity to SEQ ID NO:1, 23 residues

may be removed *en bloc* from either terminus or from any internal position or 23 residues may be changed at indeterminate positions along the length of the protein. Similarly, in a 1086 nucleotide sequence, 90 nucleotides may be changed whereas no guidance is provided for determining the nucleotide positions to be altered. Specifically, it is unclear whether these variants of BLNK proteins can maintain the same function as BLNK proteins does. Therefore, the general knowledge and level of skill in the art do not supplement the omitted description because specific, not general, guidance is what is needed. The court stated in *Amgen, Inc.* v. *Chugai Pharmaceutical Co. Ltd*, 18 USPQ2d, 1016,

> Conception of chemical compound requires that inventor be able to define compound so as to distinguish it from other materials, and to describe how to obtain it, rather than simply defining it solely by its principal biological property; thus, when inventor of gene, which is a chemical compound albeit a complex one, is unable to envision detailed constitution of gene so as to distinguish it from other materials, as well as method for obtaining it, conception is not achieved until reduction to practice has occurred, and until after gene has been isolated.

Further, the specification states at page 15 that "rabbit polyclonal" and "mouse monoclonal" antibodies to BLNK fusion proteins were made. However, these antibodies are not described: not as to their type nor the epitopes to which they bind nor the procedures by which they were made. Absent description of a representative number of nucleic acid, polypeptide and antibody species the specification cannot convey to one of skill in the art that applicant possessed the large genus of claimed nucleotide and amino acid sequences and antibodies as of the date the

application was filed. Therefore, with limited disclosure provided by the specification, the skilled artisan cannot envision all possible variants of BLNK protein which would be 95% homologous but do not correspond to BLNK protein and all possible antibodies, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method used. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of identifying it. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co.* Ltd., 18 USPQ2d 1016 (Fed. Cir. 1991).

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483. In Fiddes, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Note that this rejection may be overcome by limiting the claims to recombinant BLNK proteins having the specific functions characteristic of the proteins as described in the specification, pages 6 and 20, as cited at page 5 of the Response.

Response to Arguments

In page 10, last paragraph bridging to page 11, last paragraph of applicant's remarks, applicant argued that the specification did provide enough guidance to support claimed invention since: (1) "[T]he Applicants have provided a schematic diagram depicting the structural formula of BLINK proteins (figure 7), in which three different structural regions, an N terminus, a central region and the C-terminus are defined structurally"; (2) "[O]ne of ordinary skill in the art would be able to screen for various mutants that retained the same structural integrity of a BLNK

protein and maintained the same biological properties so desired, such as binding to Grb2."; and (3) "[O]ne of ordinary skill in the art would be able to screen for antibodies, which bind to BLNK without undue experimentation.".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, the three different structural regions of BLINK protein in Figure 7 did not provide any information for variants of recombinant BLNK proteins, which are 95% identical to recombinant BLNK proteins. Second, although "[O]ne of ordinary skill in the art would be able to screen for various mutants that retained the same structural integrity of a BLNK protein and maintained the same biological properties so desired, such as binding to Grb2." and "[O]ne of ordinary skill in the art would be able to screen for antibodies," with limited disclosure provided by the specification, the skilled artisan cannot envision all possible variants of BLNK protein which would be 95% homologous but do not correspond to BLNK protein and all possible antibodies. Therefore, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method used. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of identifying it. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co.* Ltd., 18 USPQ2d 1016 (Fed. Cir. 1991). The experiments suggested by applicant such as screening various mutants and antibodies was the complexity or simplicity of the method mentioned above, which are not included in the specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 45 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 45 is rejected as vague and indefinite in view of "wherein a decrease in the binding of said BLNK protein to said BLNK binding partner in the presence of said candidate bioactive agent indicates that said candidate bioactive agent is which modulates the activity of a BLNK protein" because it is unclear what it intended. For example, does this phrase mean that wherein a decrease in the binding of said BLNK protein to said BLNK binding partner in the presence of said candidate bioactive agent indicates that said candidate bioactive agent modulates the activity of a BLNK protein or mean something else? Please clarify.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 35-37 and 39-42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 5,994,522. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims are drawn to a recombinant nucleic acid and host cell transformed therewith wherein the nucleic acid encodes the protein of the application claims and wherein the nucleic acids and the proteins have the same sequences in both sets of claims. It would have been obvious to the skilled practitioner in the art to provide the protein of the application claims via expression of the recombinant nucleic acid in the host cell of the patent claims as routinely practiced in the art for the benefit making a sufficient amount of protein for study. It would have been obvious further to provide nucleic acids and proteins having 95% identity to the originally isolated nucleic acid and protein as routinely practiced in the art for the benefit of implementing structure-function studies.

Response to Arguments

In page 12, second paragraph of applicant's remarks, applicant "respectively request that this rejection be held in abeyance until there is an indication of allowable subject matter.".

Since applicant did not file a terminal disclaimer, this rejection maintained.

Specification

8. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. No claim is allowed.

11. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (703) 305-1270. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703) 308-1152.

Any inquiry of a general nature or relating to the status of this application should be directed to the patent Analyst of the Art Unit, Ms. Chantae Dessau, whose telephone number is (703) 605-1237.

Frank Lu
October 18, 2002

W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600